



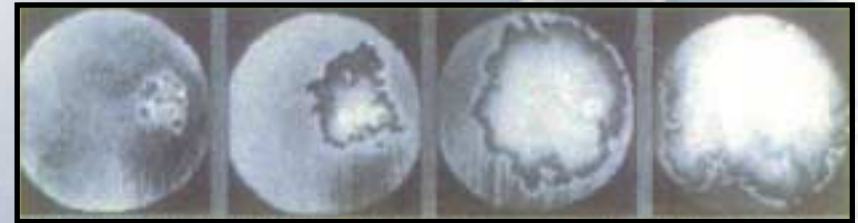
Glenn Research Center



Turbulent Combustion

◆ Relevance

Most combustion phenomena in industry and nature are turbulent



Images of turbulent flame propagation in a spark-ignition engine

◆ Advantages of Microgravity

- Length and time scales can be increased
- Flame unit processes can be resolved



Schlieren picture of a small premixed turbulent flame in 1g showing small scale structures

◆ Benefits

- Predictive capability for turbulent flames
- Improved combustor designs
- Increased combustion efficiency
- Reduced pollutant emissions
- Improved fire fighting techniques